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10/665,687

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EXAMINER

HODGE, ROBERT W

ART UNIT

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1795

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |   |  |
|------------------------------|--------------------------------------|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/665,687 | <b>Applicant(s)</b><br>SKINLO, DAVID M. |  |
|                              | <b>Examiner</b><br>ROBERT HODGE      | <b>Art Unit</b><br>1795                 |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 April 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 43-45 and 67-90 is/are pending in the application.  
     4a) Of the above claim(s) 90 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 43-45, 67-71, 73-75 and 77-89 is/are rejected.
- 7) ☒ Claim(s) 72 and 76 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 4/27/10 have been fully considered but they are not persuasive. Applicants go at great length arguing that the instant invention has supposed unexpected results and that MPEP 2144.04(VI)(C) is not applicable and that the location of how the tab is attached is not a mere design choice. Instant claim 43 is directed to an electric storage battery that is housed in a case that is sealed by end caps at both ends (see the first 2 lines of the claim). Claim 43 is a final product. The portions that applicants cite from their specification have nothing to do with the final product of the instant invention, and in fact only involve the method of assembling a storage battery. If the claims were in fact drawn to a method of assembling then the Examiner would be tasked to search for the different method steps of assembling a battery. However as stated above the instant claims are drawn to a completed final battery that is ready to be used in a device that requires electric power and applicants are asking the Examiner to read product-by-process limitations from their specification into the claims. The instant claims are also not product-by-process claims again they are drawn to a final product of a battery. There is nothing in the instant specification showing any sort of unexpected result for the final product of the battery by immobilizing the tab on an end cap past the center point of the end cap but not immobilizing the tab over the entire distance from the electrode assembly to the immobilized point. The fact is that the final battery product will function normally no matter where the tab is attached to the end cap and applicants have failed to show any unexpected results of the final

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product (emphasis added) due to the relocation of where the tab is attached to the end cap. "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433. See also Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). With regards to the combination of the prior art, Kitoh clearly teaches a tab that extends past a center point of an end cap and is immobilized at a location past the center point, Kitoh further teaches that the tab is substantially not immobilized from the electrode assembly to said location. Kitoh teaches that by said configuration the internal resistance of the storage battery can be reduced and that this is the object of the invention of Kitoh (column 2, line 22 and column 5, lines 39 & 40). In response to applicant's argument that the proposed modification would require lengthening the tabs of Kitoh, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Furthermore Chreitzberg is used to show that the tabs are completely unattached from the electrode assembly to a portion past the center point and are only attached at the one point past the center point thereby showing that technique is in fact already known in the art. Chreitzberg is not used to lengthen the tabs as applicants

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suggest nor is Chreitzberg used to teach multiple terminals extending through a single top seal as applicants suggest, neither of these scenarios were ever part of the grounds of rejection and applicants implications are completely unsubstantiated and improper.

Therefore because applicants have failed to provide any evidence of unexpected results regarding the final product as recited in the instant claims the grounds of rejection will be maintained until such time that evidence can be provided. It is noted that applicants have not argued the combination of Kitoh and Kitano and therefore affirm the grounds of rejection therein.

### ***Election/Restrictions***

Newly submitted claim 90 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 90 is directed to a method of disassembling the battery of claim 68. Claims 43 and 68 are drawn to a final product of a battery not a method of disassembling.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 90 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 89 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. No support can be found for the negative limitation of "wherein the tab is the only tab providing electrical communication between the second end cap and the electrode that is electrically insulated from the pin" as recited in claim 89. Applicants also do not provide any guidance as to where support can be found for the limitation of this newly added claim or any other newly added claim. Looking at figures 21-24 it appears that the case which is adjacent the electrode assembly and is also conductive (as per the claims and instant specification) will also provide electrical communication to the end cap in question and therefore it is not only the tab providing the electrical communication.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 43-45, 67, 83 and 85-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,399,242 hereinafter Kitoh in view of U.S. Patent No. 3,159,508 hereinafter Chreitzberg.

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Kitoh teaches a lithium battery comprising a battery case 11, a first battery lid (16), a second battery lid (17), an electrically conductive terminal pin 15 extending through the first end cap and electrically insulated from the case by sealing member 18, an electrode assembly disposed within the case with at least one electrode in electrical communication with the pin and the opposite electrode insulated from the same pin via a separator, wherein flexible conductive tabs 5 are disposed past a center point of the second battery lid and are electrically connected to the second battery lid. Kitoh further teaches that the tab is not attached to the second battery lid continuously over a distance extending from the first location to the second location. Kitoh also teaches that the case excludes a fill hole, the tabs are welded to the terminal pin and/or cap, the end cap can be made of an electrical insulative material that the pin extends through and the case is electrically conducting (figures and column 2, line 52 – column 5, line 43).

Kitoh does not teach that the conductive tab is electrically connected to the second battery lid such that the tab is immobilized only at the second location.

As seen in figure 1, Chreitzberg teaches a battery wherein the tab 8 (on the right hand side of the figure) connects to the negative electrode 3 (also on the right hand side of the figure) and extends to the negative terminal 7 (i.e. extends across the whole interior not immobilized) and is attached to the terminal in the cap only at the terminal (i.e. is only immobilized at the terminal in the cap), see also column 2, line 44 et seq.

At the time of the invention it would have been obvious to one having ordinary skill in the art to attach the flexible conductive tabs of Kitoh only at a second location past the center point from the first location of the cap as taught by Chreitzberg in order

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to reduce internal resistance and facilitate current extraction from the electrode and also since it has been held that the rearrangement of parts is within a skilled artisans level of skill in the art. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

With respect to claims 67 and 87 Chreitzberg teaches that the distance from the first location to the second location is greater than the radius of the cap and the tab extends past the center point of the cap. See Figure 1.

Claim 84 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Chreitzberg as applied to claim 43 above, and further in view of U.S. Patent No. 5,755,759 hereinafter Cogan.

Kitoh as modified by Chreitzberg does not teach the use of PtIr alloy as the pin.

Cogan teaches a biomedical device wherein the wire electrode is made of PtIr alloy because it can record or stimulate physiological function. See Column 3, Lines 43-56.

At the time of the invention it would have been obvious to having ordinary skill in the art to use PtIr alloy as the pin for the battery of Kitoh as modified by Chreitzberg, in order to provide an electrode pin that has reduced electrical resistance thereby improving the overall performance of the battery. If a technique has been used to improve one device (an electrode made of PtIr), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).



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Claims 43-45, 67, 83 and 85-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,399,242 hereinafter Kitoh in view of U.S. Patent No. 5,912,089 hereinafter Kitano.

Kitoh does not teach that the conductive tab is electrically connected to the second battery lid such that the tab is immobilized only at the second location. With regards to claim 89 Kitoh does not teach the use of a single tab.

As seen in figures 2 and 3, Kitano teaches a battery wherein a perforated current collector 4 is attached to the electrode assembly with a single tab 6 extending from said current collector at an area adjacent to the case to a second location A and is attached to the cap only at location A (i.e. immobilized at location A) and is not immobilized over the entire distance from the first location to the second location (column 3, lines 30-40).

At the time of the invention it would have been obvious to one having ordinary skill in the art to attach the flexible conductive tabs of Kitoh only at a second location past the center point from the first location of the cap as taught by Kitano in order to reduce internal resistance and facilitate current extraction from the electrode and also since it has been held that the rearrangement of parts is within a skilled artisans level of skill in the art. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). With regards to claim 89 it further would have been obvious to use only one combined current collector and tab in Kitoh as taught by Kitano to further reduce internal resistance and facilitate current extraction from the electrode and also since it has been held that forming in one piece an article which has formerly been formed in multiple pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150

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U.S. 164 (1893). The claimed subject matter merely combines familiar elements (a single tab connected to an end cap) according to known methods and does no more than yield predictable results. See MPEP 2141 (III) Rationale A, KSR v. Teleflex (Supreme Court 2007).

With respect to claims 67 and 87 Kitano teaches that the distance from the first location to the second location is greater than the radius of the cap and the tab extends past the center point of the cap. See Figure 1.

Claim 84 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Kitano as applied to claim 43 above, and further in view of U.S. Patent No. 5,755,759 hereinafter Cogan.

Kitoh as modified by Kitano does not teach the use of PtIr alloy as the pin.

Cogan as discussed above is incorporated herein.

At the time of the invention it would have been obvious to having ordinary skill in the art to use PtIr alloy as the pin for the battery of Kitoh as modified by Kitano, in order to provide an electrode pin that has reduced electrical resistance thereby improving the overall performance of the battery. If a technique has been used to improve one device (an electrode made of PtIr), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).

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Claims 68-71, 73-75 and 77-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Chreitzberg as applied to claim 43 above, and further in view of U.S. Patent No. 4,053,687 hereinafter Coibion.

Kitoh as modified by Chreitzberg does not teach that the electrodes and separators are wound around the pin to form a spiral role on the pin.

Coibion teaches an electrochemical cell wherein a combined cylindrical (i.e. tube shaped) mandrel/pin (that reinforces the electrode assembly) is used to hold an uncoated region of the electrode in a longitudinal slot during winding such that only one electrode is present in the slot and the electrode can be welded in the slot of the mandrel/pin (figures 5-9 and Column 4, line 62—Column 6, line 3).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a combined mandrel/pin in Kitoh as modified by Chreitzberg as taught by Coibion in order to properly immobilize the electrode assembly thereby preventing damage to the electrodes which could cause short circuiting when the battery is exposed to large mechanical forces or prolonged vibration.

With regards to claim 70, Kitoh as modified by Chreitzberg and Coibion teaches the claimed invention except for having a separate mandrel and pin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a separate mandrel and pin, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. MPEP 2144.04 V (C).

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With regards to claim 80, Kitoh as modified by Chreitzberg and Coibion teaches the claimed invention except for the cross-sectional shape of the mandrel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the shape of the mandrel, since it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. MPEP 2144.04 IV (B).

Claims 68-71, 73-75 and 77-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Kitano as applied to claim 43 above, and further in view of U.S. Patent No. 4,053,687 hereinafter Coibion.

Kitoh as modified by Kitano does not teach that the electrodes and separators are wound around the pin to form a spiral role on the pin.

Coibion teaches an electrochemical cell wherein a combined cylindrical (i.e. tube shaped) mandrel/pin (that reinforces the electrode assembly) is used to hold an uncoated region of the electrode in a longitudinal slot during winding such that only one electrode is present in the slot, the electrode can be welded in the slot of the mandrel/pin (figures 5-9 and Column 4, line 62—Column 6, line 3).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a combined mandrel/pin in Kitoh as modified by Kitano as taught by Coibion in order to properly immobilize the electrode assembly thereby preventing damage to the electrodes which could cause short circuiting when the battery is exposed to large mechanical forces or prolonged vibration.

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With regards to claim 70, Kitoh as modified by Kitano and Coibion teaches the claimed invention except for having a separate mandrel and pin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a separate mandrel and pin, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. MPEP 2144.04 V (C).

With regards to claim 80, Kitoh as modified by Kitano and Coibion teaches the claimed invention except for the cross-sectional shape of the mandrel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the shape of the mandrel, since it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. MPEP 2144.04 IV (B).

### ***Allowable Subject Matter***

Claims 72 and 76 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or fairly suggest that the mandrel comprises titanium and a channel to inject electrolyte and there is no motivation for a skilled artisan to modify the prior art of record to make the instantly claimed invention of claims 72 or 76.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/  
Primary Examiner, Art Unit 1795